

PJM and SMD: An Overview

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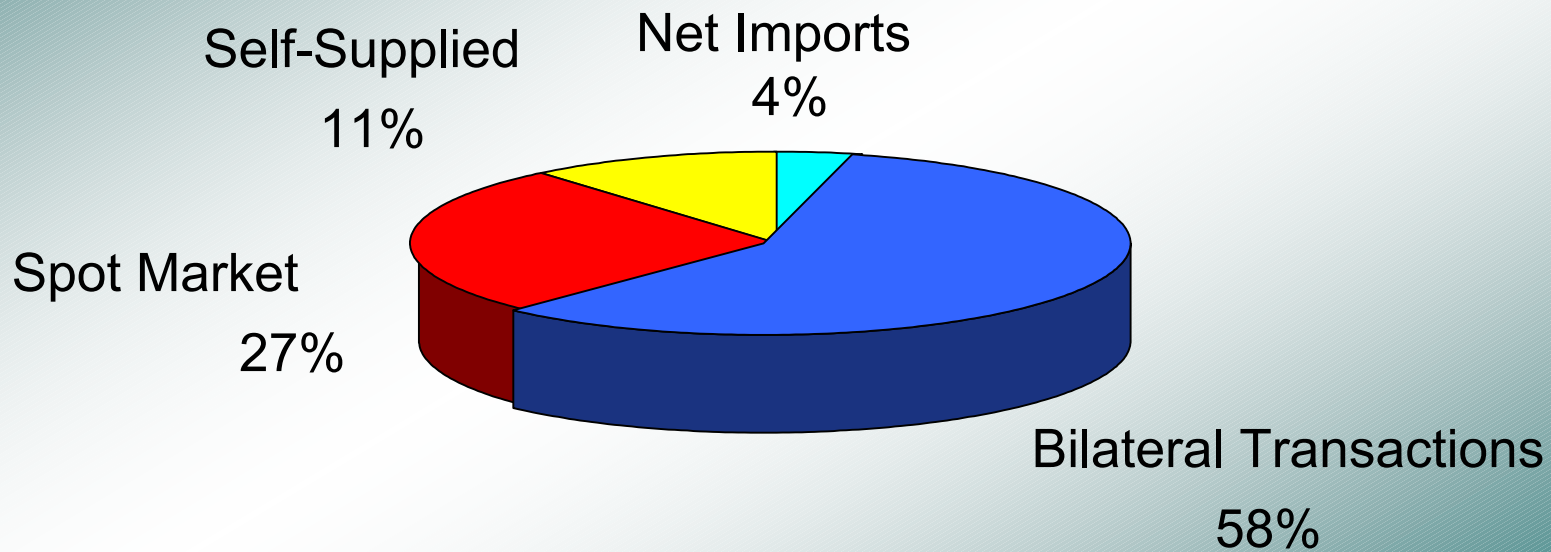
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➤ **Maintains the reliability of the grid, and**

➤ **Operates:**

- **Voluntary Bid-based Energy Spot Markets:**
 - **Day Ahead Market**
 - Participants submit offers to sell and bids to purchase for the following day
 - PJM calculates hourly clearing prices and stacks the bids
 - Prices are financially binding in real time
 - **Real Time Market**
 - As demand shifts, PJM keeps supply and demand in balance by calling on or off generation
 - PJM calculates hourly clearing prices based on actual system operations dispatch
- **Ancillary Services Markets**
 - Regulation
 - Spinning Reserve
- **Capacity Market**
- **FTR Market**

2001 Energy Market





PJM's Two Tiered Governance Structure

➤ **Independent Board of Managers**

- Fiduciary duties:
 - Create and operate competitive non-discriminatory electric markets
 - Ensure reliability
 - Avoid undue influence by any market participant

➤ **Members Committee**

- Provides advisory support
 - Voting on recommendations is done by sectoral weighted voting
 - Generation Owners
 - Transmission Owners
 - Other Suppliers
 - End Use Customers
 - Electric Distributors
- Elects the PJM Board

- **Implementation agreements signed with:**
 - Commonwealth Edison
 - Dayton Power & Light
 - AEP
 - National Grid

- **On June 25, 2002, Dominion and PJM announced that they are working towards creation of PJM South**

- **SMD builds on successful operations of markets, including PJM's markets**

- **PJM supports the concepts concerning:**
 - Independent Governance
 - Transparency of markets
 - Voluntary Markets
 - Congestion Revenue Rights to protect native load
 - Market power mitigation
 - Ensuring capacity to meet reliability needs



What Does PJM Bring to the Midwest

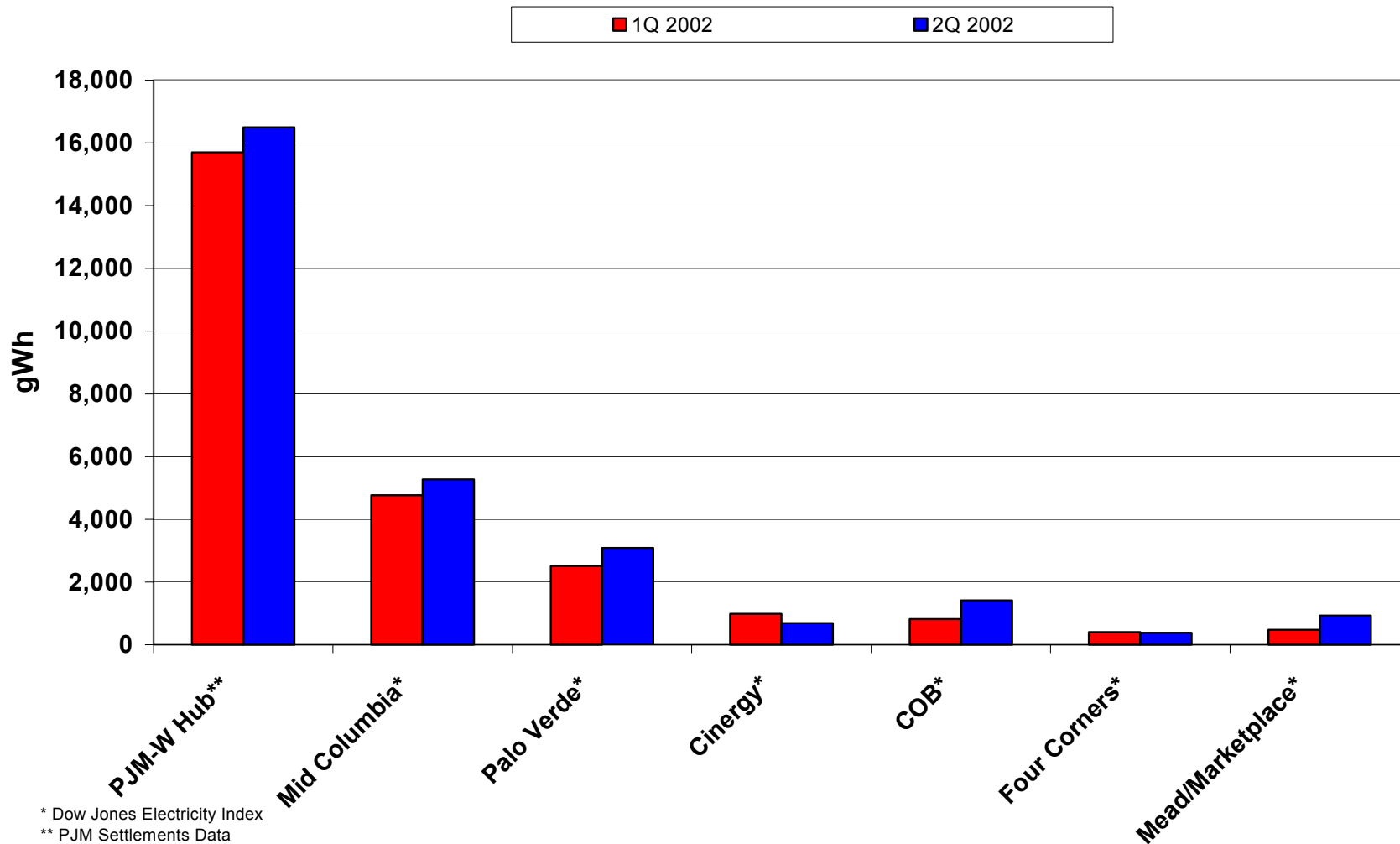
➤ Transparency of Markets

- First Price Spike was not in California
- First Price Spike was in the Midwest (1997)
 - Lack of price transparency
 - Lack of clearing markets
- With PJM, market participants and regulators can see what is going on
 - All spot market prices and congestion costs are posted on PJM's Website
 - Prices and system conditions are posted on PJM's Website every five minutes

➤ Liquidity

Liquidity at U.S. Hubs

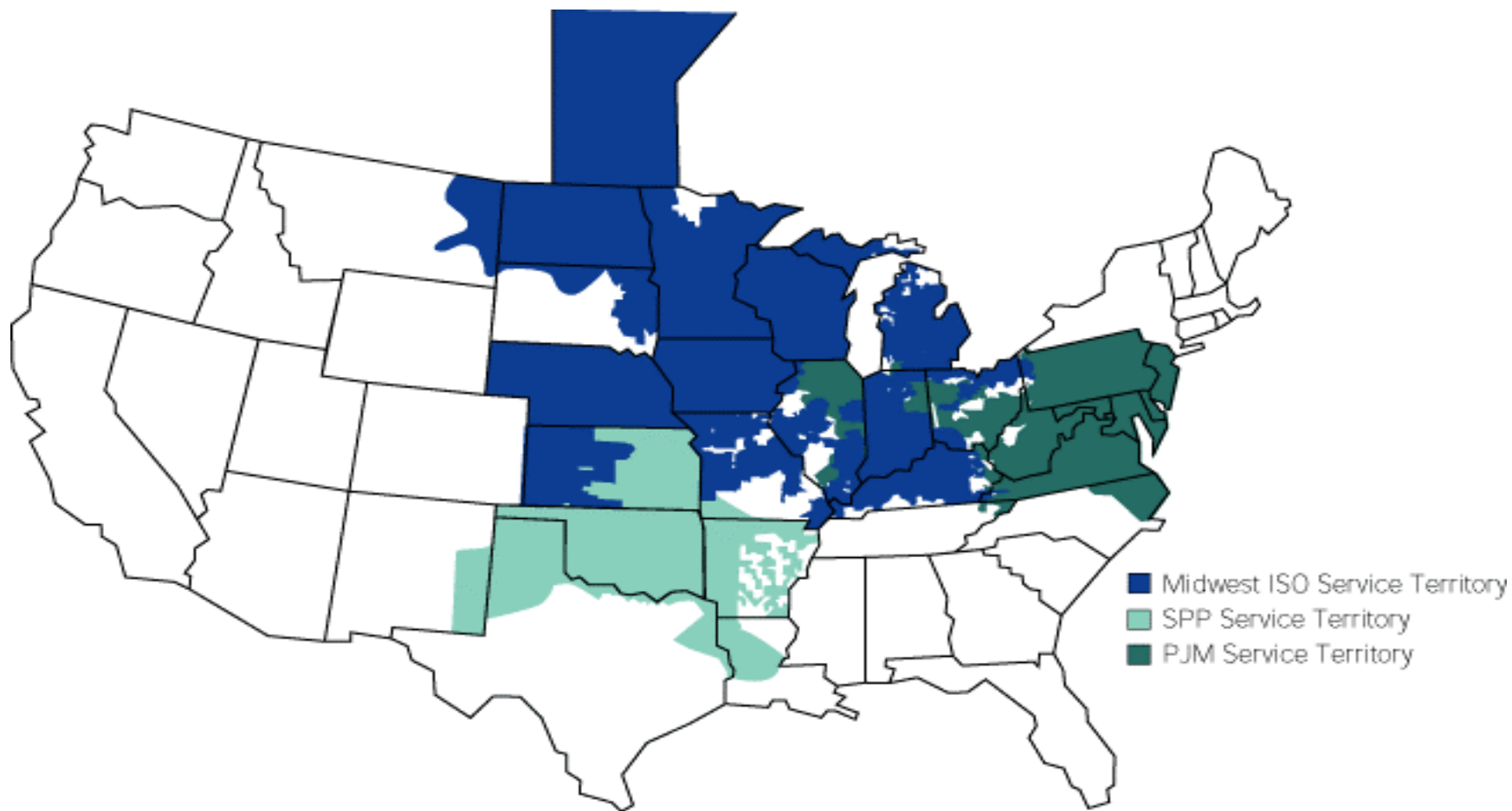
July 2002



➤ **Average PJM prices (January - July 2002)**

- Energy - \$25 per MWh
- Regulation - \$0.41 per MWh of load
- Spinning Reserve - \$0.14 per MWh of load
- Operating Reserve - \$0.16 per MWh of load

- **PJM and MISO are developing a one stop shop for wholesale energy and transmission service**
- **Joint and Common Market will be consistent with many of the features contained in SMD:**
 - Locational Marginal Pricing
 - Congestion Revenue Rights
 - Real-time & Day-ahead energy markets
 - Voluntary markets supporting self-scheduling and bilateral contracts



- **Independent cost/benefit analysis, which estimates that the Joint and Common Market will:**
 - Result in a \$7 Billion reduction in energy prices over the next ten years
 - Provide markets with sufficient depth and liquidity to enable effective forward contracting
 - Minimize the risk of market failure

- **Single Market and System Operator**
- **Voluntary Market, which allows for self scheduling and bilateral transactions**
- **Bid Based Security Constrained Economic Dispatch for:**
 - Day Ahead Market
 - Real Time Market
- **Use of Locational Marginal Pricing**
- **Use of Ex Post pricing**
- **CRRs are basically the same as PJM's FTRs**

➤ **SMD's Proposal:**

- Nominating Council both chooses who runs and elects the Board members

➤ **PJM's Proposal:**

- Board nominating council made up of :
 - Two Independent Board Representatives
 - One representative from each of the five sectors
- Board nominating council would recommend a candidate by simple majority
- Candidate would then go before the members committee, where each sector would have a weighted vote

- **Certain SMD proposals could dramatically increase computational requirements and invite gaming, which will delay the development of a robust Joint and Common Market:**
 - Hourly Bidding
 - Day Ahead Regulation Markets

- **SMD is positive in its endorsement of the need for a capacity obligation to maintain reliability**
- **However, the penalties proposed are too low:**
 - LSEs could simply make a business decision to pay the penalty, which will not advance reliability
- **Capacity plan will not accommodate retail choice**
- **Capacity plan may not guarantee needed capacity for reliability needs**

- **ITCs add value to the marketplace**
 - Construction of new transmission
 - Offering financial instruments that hedge congestion
- **Markets and operations are integrated**
 - ITCs should not be engaged in integrated operations with the marketplace
 - “Footprint” sovereignty concept limited once market is integrated

- **SMD brings liquidity and opportunity to customers**
- **Important to note that opportunity does not mean that states do not lose control**
 - Voluntary markets
 - Reserve margins
 - Planning processes
 - Integral working relationship with the ISO

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